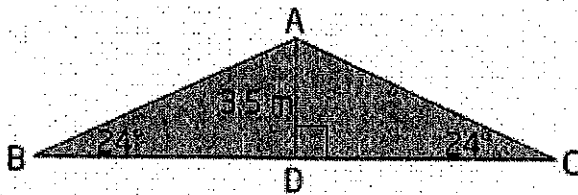


OPEN RESPONSE – Show work!

1. A roof is shaped like an isosceles triangle. The slope of the roof makes an angle of 24° with the horizontal, and has an altitude of 3.5 m. Determine the width of the roof, to the nearest tenth of a metre.

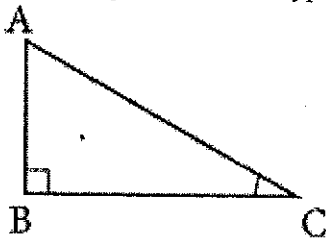


- ~~2.~~ A flight of stairs has a ratio of vertical distance:horizontal distance of 3:5. What angle does the flight of stairs make with the ground, to the nearest degree?

3. A telephone pole is secured with a guy-wire as shown in the diagram. The guy-wire makes an angle of 75° with the ground and is secured 6 m from the bottom of the pole. Determine the height of the telephone pole, to the nearest tenth of a metre.



4. In the diagram, label the hypotenuse, the opposite side, and the adjacent side relative to angle C.



5. Laura is flying a kite at a local park. She lets out 60 m of her kite string, which makes an angle of 68° with the ground. Determine the height of the kite above the ground, to the nearest tenth of a metre.

6. Kevin is standing at the top of a ladder picking apples from an apple tree. The 7-m long ladder is propped against the tree, and makes an angle of 70° with the ground. He tosses the apples into a basket located 5.4 m from the base of the ladder, on the opposite side of the tree.

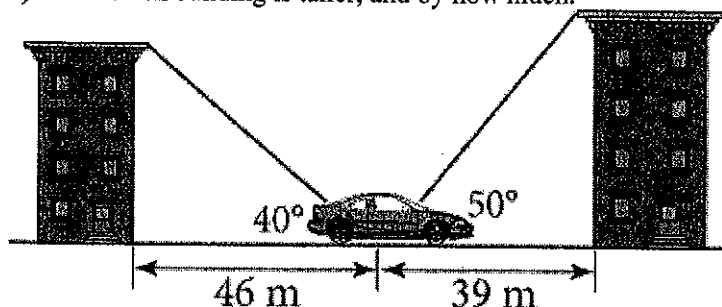
a) Determine the distance of the base of the ladder from the tree, in metres.

b) If Kevin looks down on the basket from the top of the ladder, what is the angle of depression? Answer in degrees.

7. Matthew parks his car between Karen's and Patrick's apartment buildings. The car is 46 m in front of Karen's apartment building. The angle of elevation from the car to the top of the building is 40° . Matthew's car is 39 m behind Patrick's apartment building. The angle of elevation from the car to the top of the building is 50° .

a) Determine the height of each building, to the nearest metre.

b) State which building is taller, and by how much.



8. Jose is sitting in a tree, so that his eyes are 3.2 m above the ground. When he looks down at an angle of depression of 42° , he can see his cat sitting in the yard.

a) Draw a diagram of the situation.

b) Determine the horizontal distance, to the nearest tenth of a metre, from the base of the tree to Jose's cat.

9. Myriam is participating in a water skiing competition. She goes over a water ski ramp that is 4.0 m long. When she leaves the ramp, she is 1.7 m above the surface of the water.

a) What is the horizontal length of the ramp along the surface of the water, to the nearest tenth of a metre?

b) Determine the angle of elevation of the ramp, to the nearest degree.